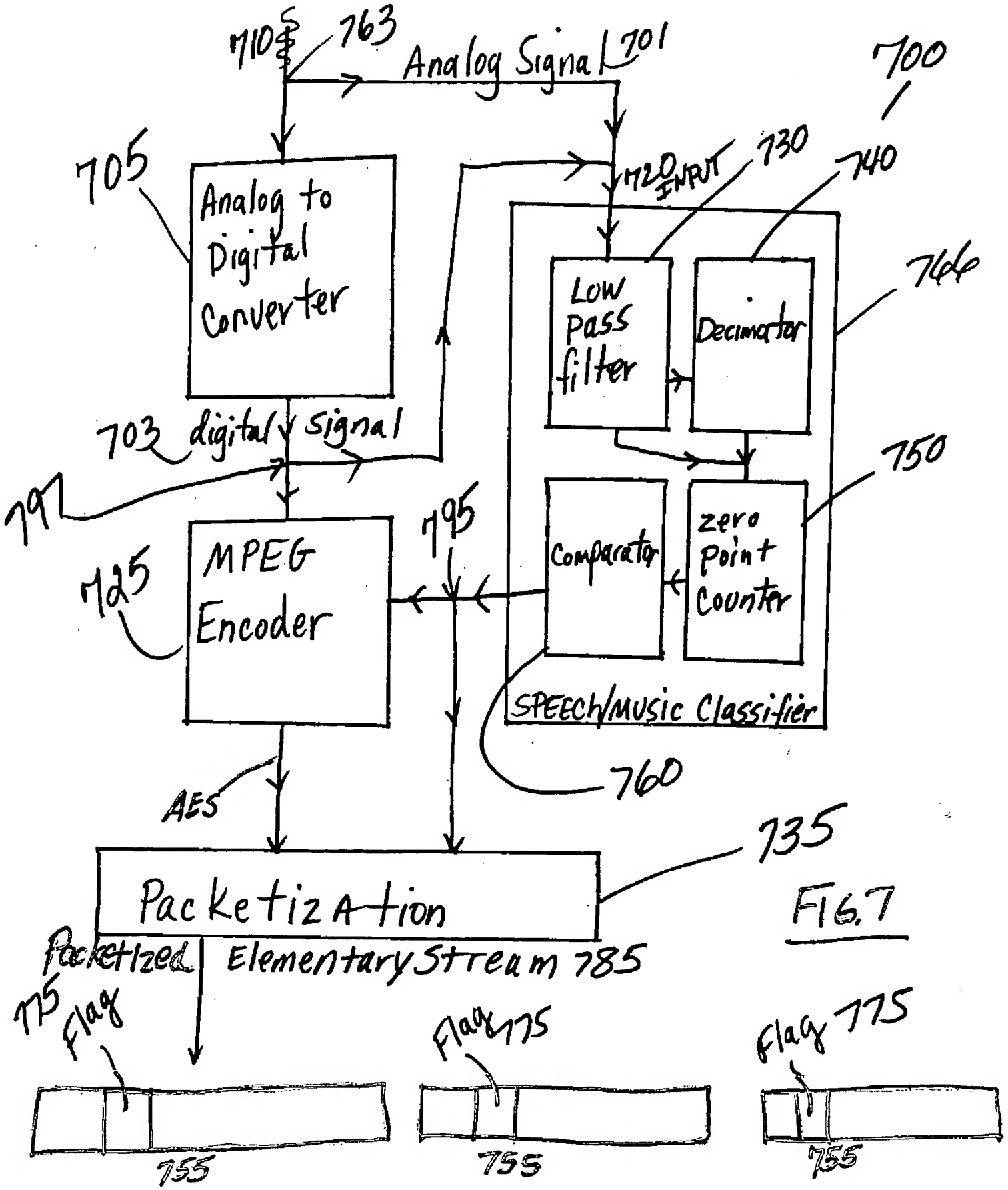
710
763
Analog Signal
701
700
705
Analog to Digital Converter
720 INPUT
730
740
Low pass filter
Decimator
766
703 digital signal
750
797
795
MPEG Encoder
725
Comparator
zero point Counter
SPEECH/MUSIC Classifier
760
AES
735
Packetization
Packetized Elementary Stream 785
775
Flag
755

FIG. 7

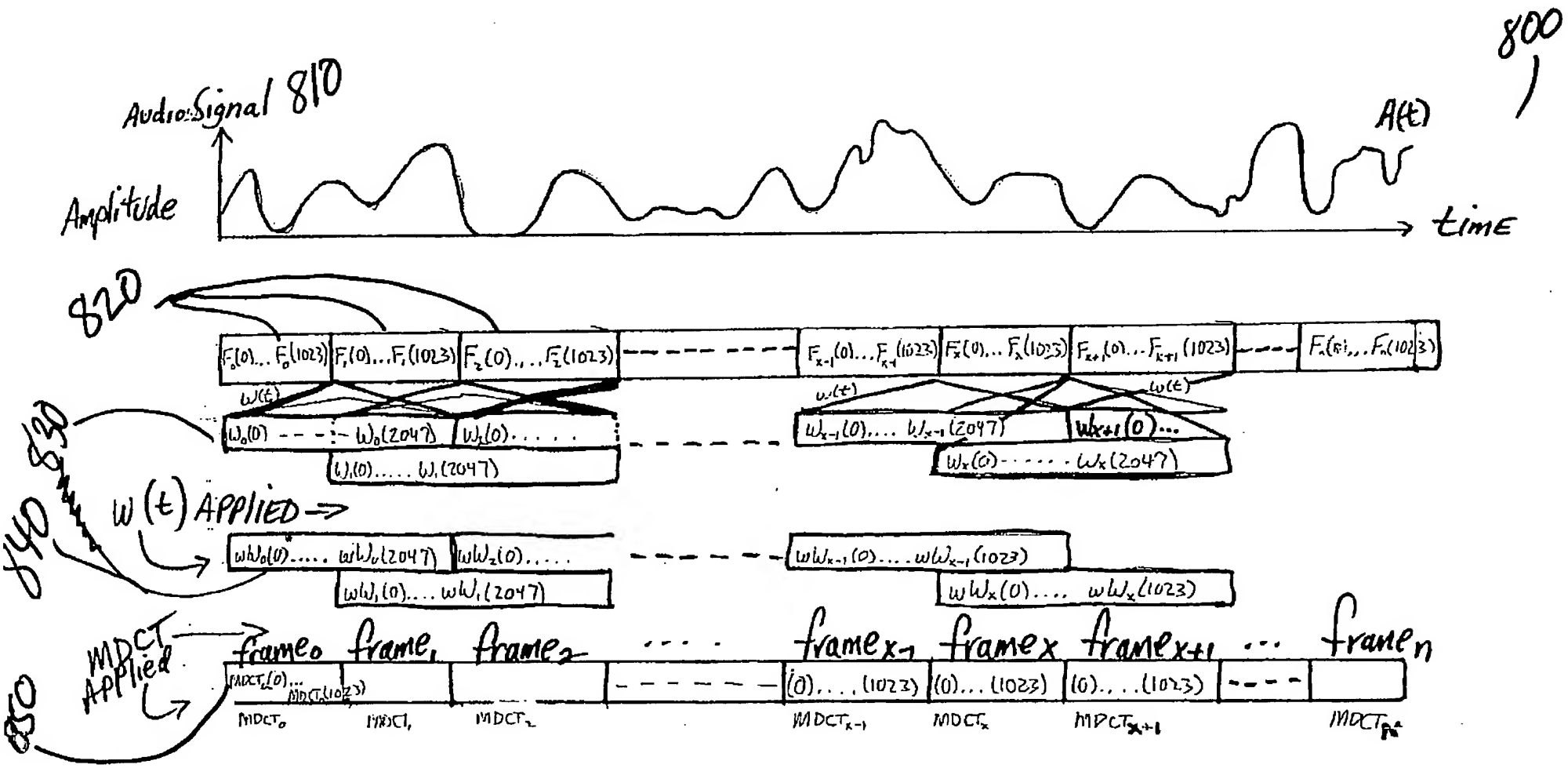
800
Audio Signal 810
Amplitude
time
A(t)
820
830
840
W(t) APPLIED
MDCT APPLIED
850
frame0
frame1
frame2
framex-1
framex
framex+1
framen

FIGURE 8

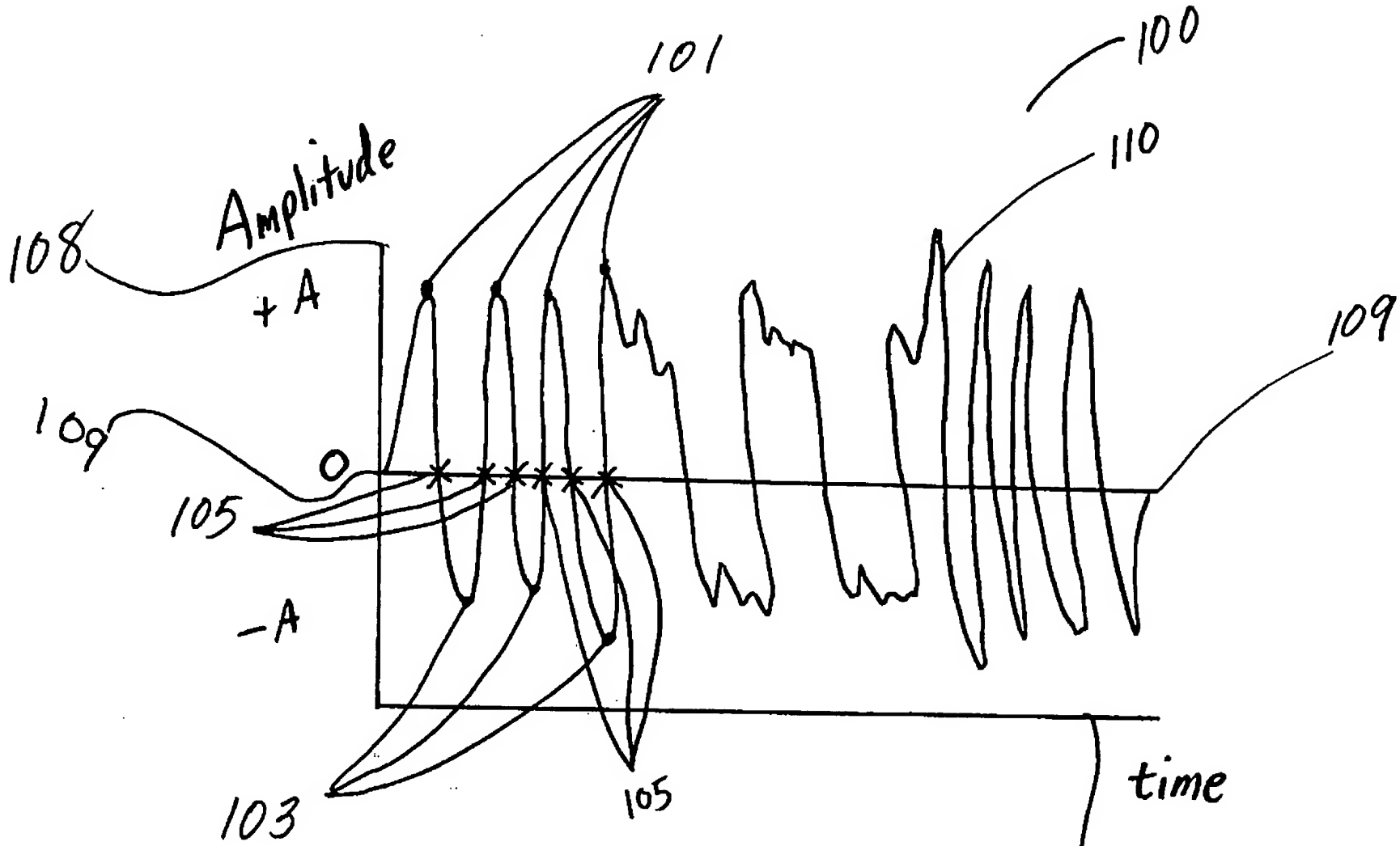


Fig. 1

200

# Analog Signal

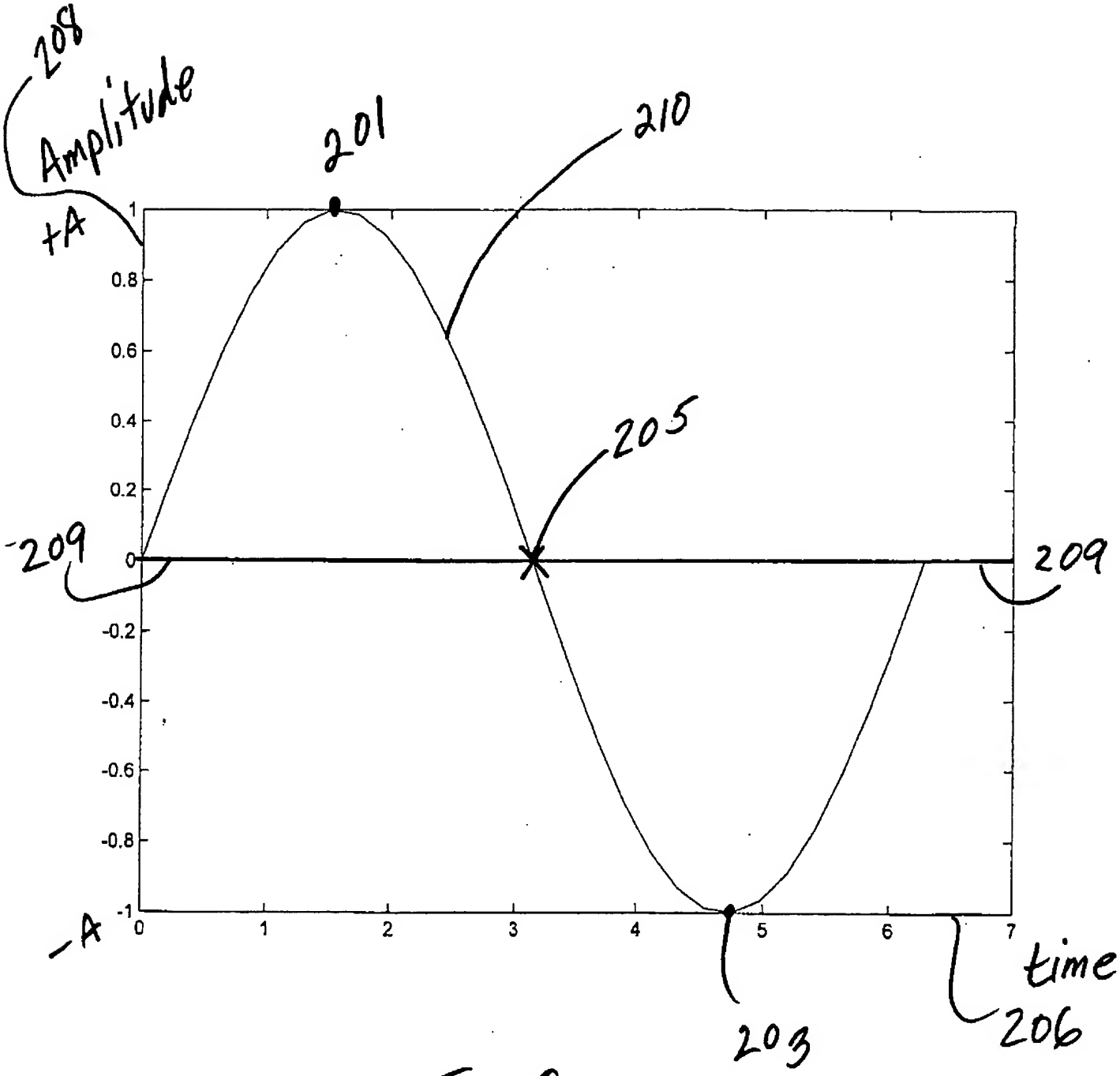


Fig. 2

300

# Sampling

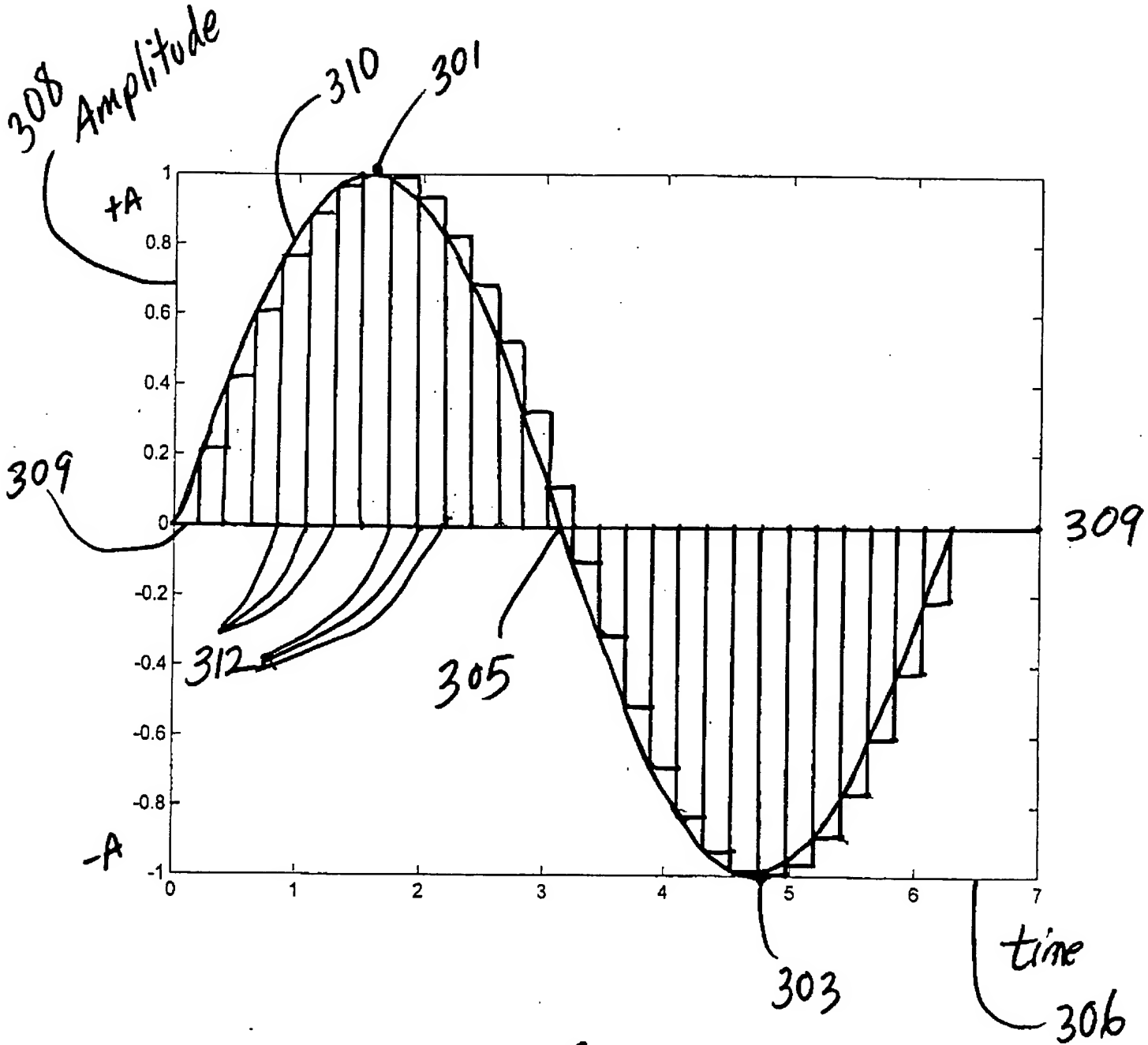


Fig. 3

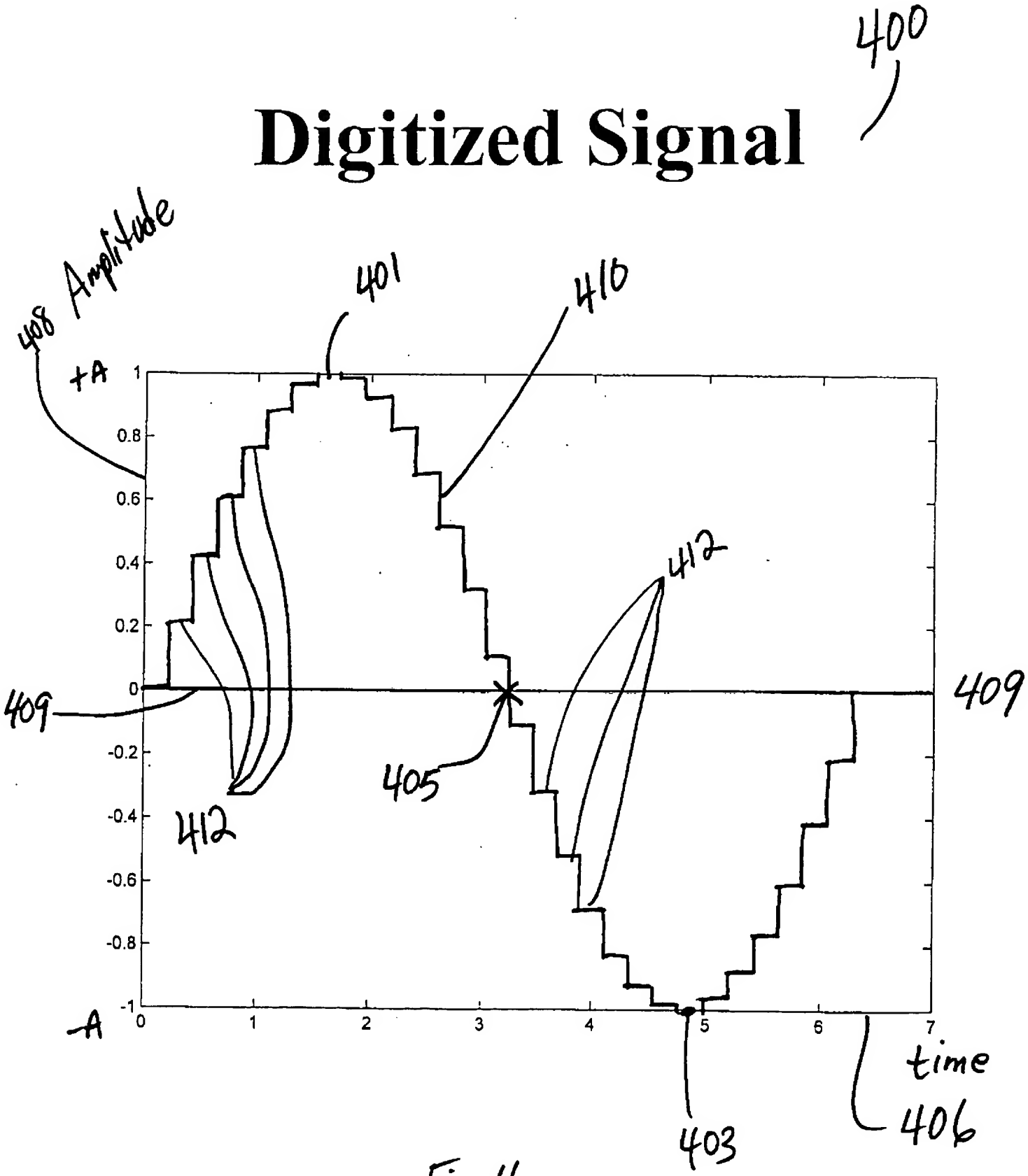
400
Digitized Signal
408 Amplitude
+A
-A
401
410
412
412
405
409
409
403
406
time
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
1
2
3
4
5
6
7

Fig. 4

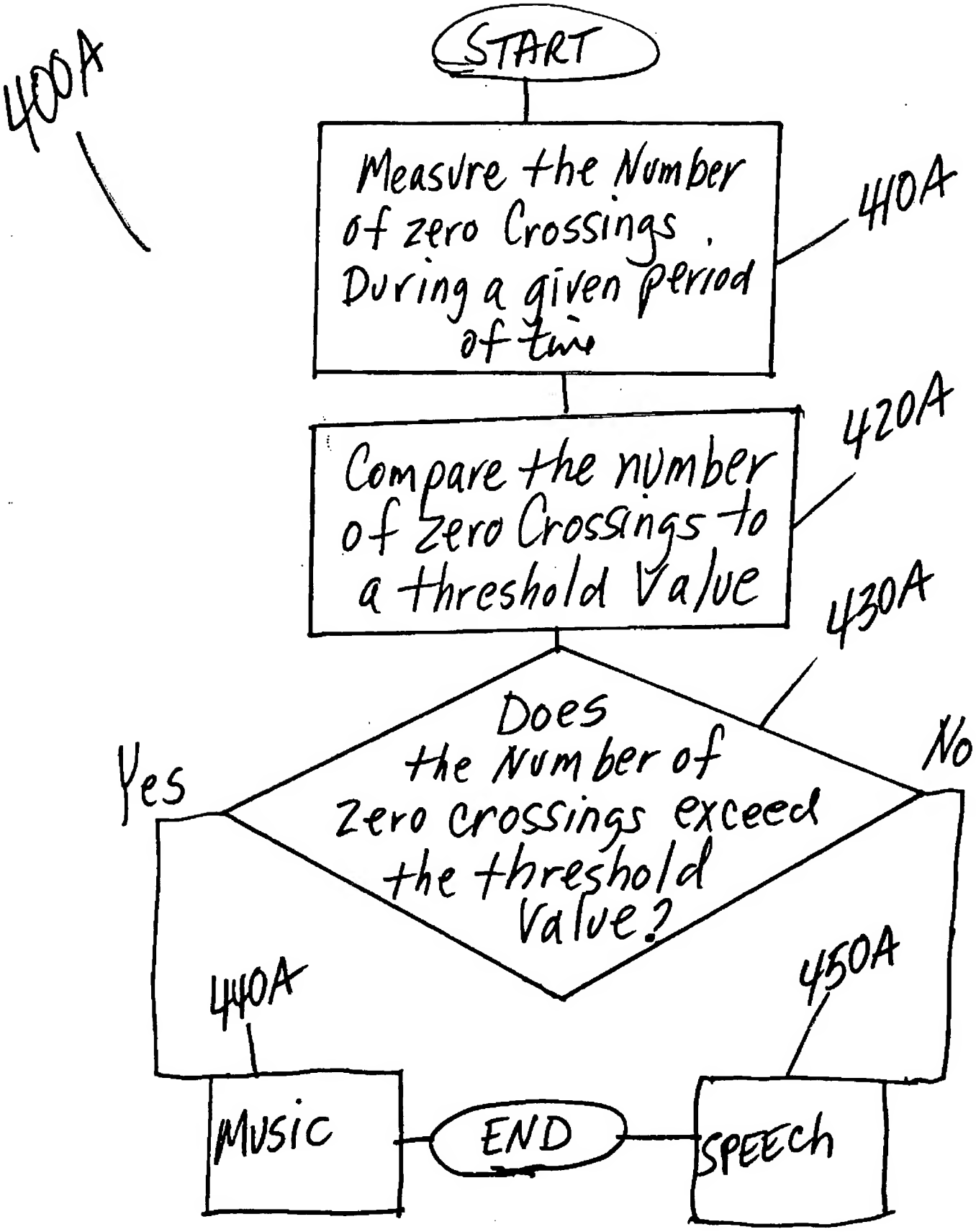
400A
START
Measure the Number of zero Crossings. During a given period of time
410A
Compare the number of Zero Crossings to a threshold Value
420A
Does the Number of Zero crossings exceed the threshold Value?
430A
Yes
No
440A
450A
MUSIC
END
SPEECH

Fig. 4A

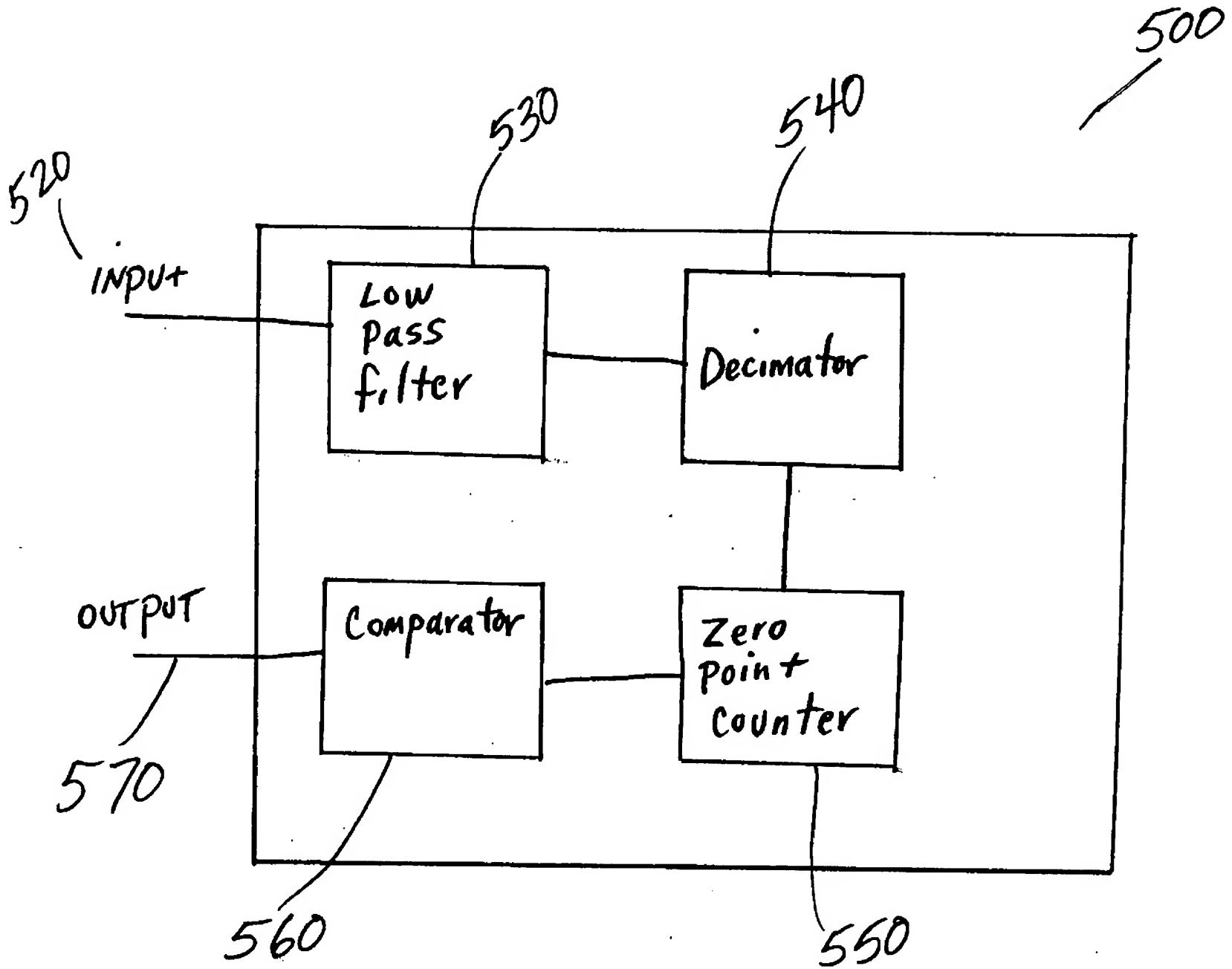
500
530
540
520
INPUT
Low Pass filter
Decimator
OUTPUT
Comparator
Zero Point Counter
570
560
550

Fig. 5

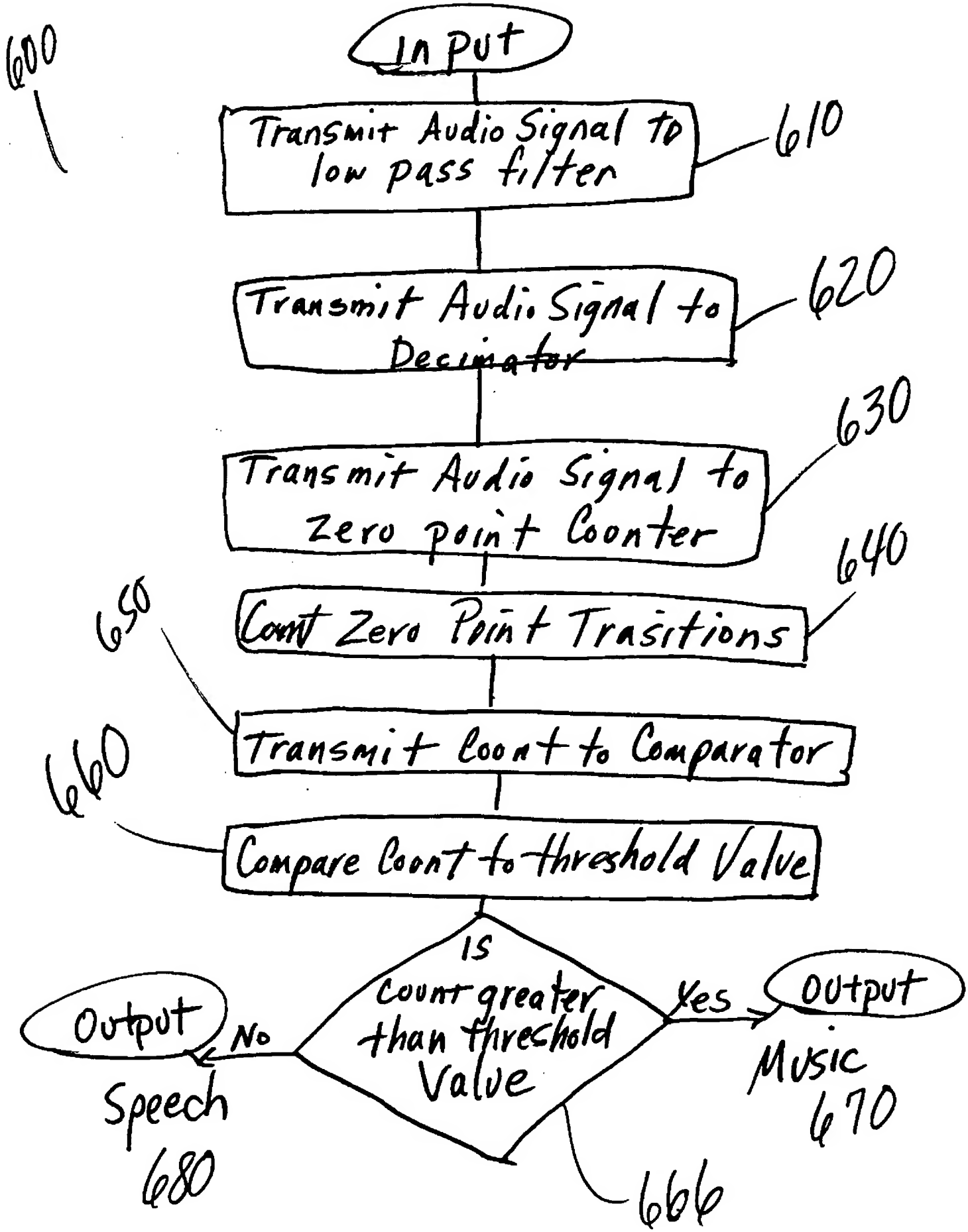
600
Input
Transmit Audio Signal to low pass filter
610
Transmit Audio Signal to Decimator
620
Transmit Audio Signal to Zero point Coonter
630
Count Zero Point Trasitions
640
650
Transmit Coont to Comparator
660
Compare Coont to threshold Valve
IS Count greater than threchold Valve
666
Yes
Output
Music
670
No
Output
Speech
680

Fig. 6

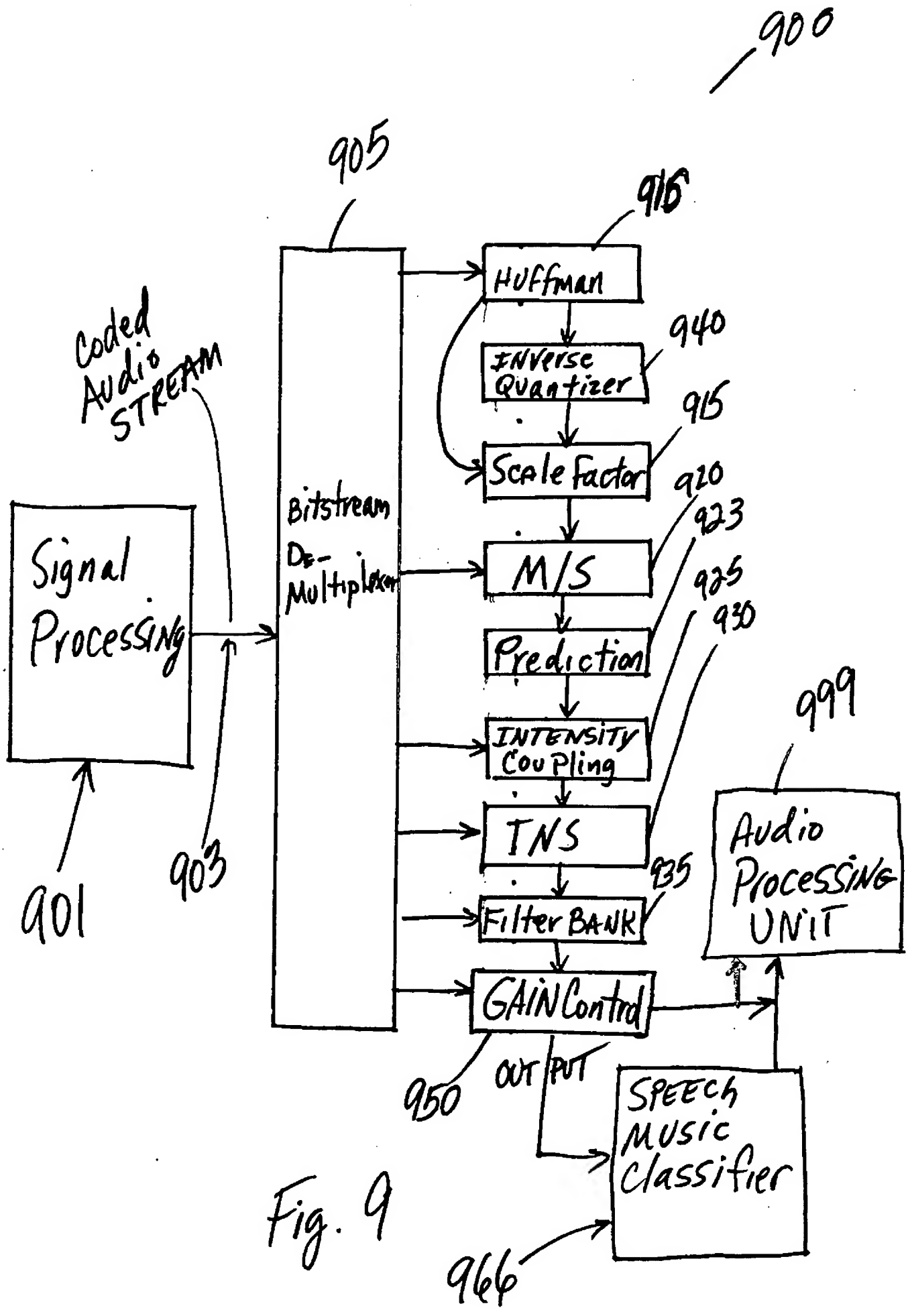
900
905
916
Huffman
940
Inverse Quantizer
915
Scale Factor
920
923
M/S
925
930
Prediction
Intensity Coupling
TNS
935
Filter Bank
Gain Contrl
950
Output
Coded Audio Stream
Bitstream De-Multiplexer
Signal Processing
901
903
999
Audio Processing Unit
Speech Music Classifier
966

Fig. 9